FSA Integration Partner

United States Department of Education

Federal Student Aid

EAI Evergreening Schedule and Approach

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1 Introduction

1.1 Summary

The purpose of EAI Evergreening Schedule and Approach document is to communicate the software components planned for upgrade or installation to support the EAI Architecture for Fiscal Year 2003.

The document is summarized in the following sections:

- ***Section 2:*** *Evergreening Approach* - Provides an overview of the Evergreening approach.
- ***Section 3:*** *Software Upgrades* – Provides detail of the vendor patches, point, or maintenance releases to be applied to existing software in the EAI Architecture.
- ***Section 4:*** *New Software* - Provides detail of new software to be added to the EAI Architecture.
- ***Section 5:*** *Future Software Changes* – Provides a summary of the known software changes not in the current Evergreening scope, but on the horizon and should be considered in future planning.
- ***Section 6:*** *Evergreening Schedule* - Provides an overview of the Evergreening implementation schedule.

2 Evergreening Approach

Evergreening is the process of updating existing software and/or adding new software to the existing EAI Architecture. The key drivers for initiating any change to the architecture include:

- FSA business needs
- Ensuring product vendor support
- Resolving software bugs or defects
- Leveraging software functionality and/or performance

Evergreening is a continual process and a vital component of normal software environment maintenance. This process requires the effort and coordination of all parties involved: FSA stakeholders, software vendors, EAI Team, and the Virtual Data Center (VDC) personnel. Each party has a role and responsibility within the evergreening process, which is summarized in the following table:

Role	Responsibility	Responsible Party
Business Owner	▪ Provide business drivers / software input ▪ Provide approval for new software ▪ Provide approval for architecture	FSA
Software Vendor	▪ Provide Vendor Support ▪ Provide software patches and releases	IBM CommerceQuest MQSoftware
Architecture, Development, and Testing Team	▪ Provide overall architecture design ▪ Provide input to software evergreening approach and schedule ▪ Coordinate evergreening efforts with Data center and Software License Owner ▪ Application / installation of new software, patches and maintenance releases in the EAI **Development** and **Test** environments. ▪ Regression testing of EAI Production architecture with new software, patches and maintenance releases ▪ Creation of change requests and provide installation documentation (if applicable) to request VDC for Production migration of software change	EAI Team
Data Center, Software License Owner	▪ Provide input to software evergreening approach and schedule ▪ Provide software media to Arch/Dev/Test team ▪ Provide appropriate system administration and software installation assistance to Arch/Dev/Test team. ▪ Application / installation of new software, patches and maintenance releases in the EAI **Staging** and **Production** environments. ▪ Establish and re-new software license support agreements.	VDC

3 Software Upgrades

This section provides the detailed information of software vendor patches, point, or maintenance releases to be applied to existing software in the EAI Architecture

3.1 WebSphere MQ Integrator (Formerly MQ Series Integrator)

WebSphere MQ Integrator provides the EAI Bus the intersystem message transformation, routing, and formatting capability.

3.1.1 Upgrade Summary

Current Version	2.0.1 (Client & Server)
Vendor End of Service Date for Current Version	12 / 31 / 2002
Target Version	2.0.2 (Client & Server)
Release Date	December 14, 2001
Reason for Change	Vendor end of service for current version
Benefits / New Functionality	▪ Transforms, augments and applies rules to message-based data, and routes and distributes it between high performance systems ▪ Integrates both existing and new applications ▪ Integrates application and business data using dynamic content and topic-based publish / subscribe functions ▪ Visualizes the application flow through a graphical development environment ▪ Allows message formats to be defined through a variety of dictionaries, either those supplied with the product or from a third party ▪ Simplifies support for multiple environments with a variety of application adapters, templates and tools ▪ Provides a fully scalable architecture to meet growing business needs ▪ Has an open, architectural framework which allows the use of built-in components with third-party offerings ▪ Exploits and complies with industry standards such as SQL and XML ▪ Provides compatibility with relevant standards such as OMG, EJB, XML / EDI, ERP, CRM and SCM formats ▪ Allows database updates under transactional control ▪ Integrates with MQSeries transaction control and allows end-to-end transaction co-ordination of application integration ▪ Optimizes the functions of MQSeries Integrator Version 2, and supports and exploits the functions of MQSeries Version 5.2 which is shipped with the product ▪ Improves usability in the development environment via a new integrated, interactive visual message flow debugger and a node development wizard ▪ Enhances support for remote users with direct support for MQSeries Everyplace and SCADA clients ▪ Improves support for New Era of Networks Version 5.2 and the Message Repository Manager (MRM) to provide backward compatibility with rules, formats and templates ▪ Supports 10 national languages ▪ Significantly increases integration opportunities - in addition to enhancements to the AIX, Sun Solaris, and Windows®

	versions, the latest release also supports HP-UX and the iSeries (AS/400) (using the Integrated xSeries Server {IXS} to implement MQSeries Integrator for Windows) ▪ Includes transactional support for Oracle.
Upgrade Cost	Covered under existing maintenance agreement
Operating Systems Supported	▪ Server - Sun Solaris 8 (requires fix 109147-06 from Sun), ▪ Client - Windows NT Server/Workstation 4.0 (SP5 or SP6a)
Vendor End of Service Date for Target Version	▪ Sun Solaris 8 – 12/31/2003 ▪ Windows NT – 12/31/2003
Software License Owner	CSC – VDC

3.1.2 Systems Affected

System / Application	Environment	Server	Operating System
MQSI Control Center	Development	SFANT006	Windows NT 4.0
EAI Bus	Test	SU35E17	Solaris 7
MQSI Control Center	Production	Ombuds_OAS	Windows NT 4.0
EAI Bus	Production (1)	SU35E3	Solaris 7
EAI Bus	Production (2)	SU35E14	Solaris 7

3.2 IBM DB2 Universal Database

IBM DB2 serves as the back end data store for WebSphere MQ Integrator.

3.2.1 Upgrade Summary

Current Version	v 6.1, FixPak 11 Upgrade in progress. Applied to Dev / Test. Waiting on VDC to apply to Production (VDCMP-00000903)
Vendor End of Service Date for Current Version	12 / 31 / 2001
Target Version	v 7.2, FixPak 7
Release Date	September 9, 2002
Reason for Change	Vendor end of service for current version
Benefits / New Functionality	▪ Upgrade required for support and version compatibility with WebSphere MQSeries Integrator v2.0.2.
Upgrade Cost	Covered under existing maintenance agreement
Operating Systems Supported	▪ Server - Sun Solaris 8 (requires fix 109147-06 from Sun), ▪ Windows NT Server / Workstation 4.0 (SP5 or SP6a)
Vendor End of Service Date for Target Version	▪ Sun Solaris 8 – 03 / 31 / 2004 ▪ Windows NT – 03 / 31 / 2004
Software License Owner	CSC – VDC

3.2.2 Systems Affected

System / Application	Environment	Server	Operating System
MQSI Control Center	Development	SFANT006	Windows NT 4.0
EAI Bus	Test	SU35E17	Solaris 7
MQSI Control Center	Production	Ombuds_OAS	Windows NT 4.0
EAI Bus	Production (1)	SU35E3	Solaris 7
EAI Bus	Production (2)	SU35E14	Solaris 7

3.3 WebSphere MQ (Formerly MQ Series)

WebSphere MQ is the messaging backbone, which is the core of the EAI bus.

3.3.1 Upgrade Summary

Current Version	5.2
Vendor End of Service Date for Current Version	12/31/2003
Target Version	5.3**
Release Date	▪ July 26, 2002, for HP-UX, Sun Solaris and Windows (Media)
Reason for Change	Vendor end of service for current version
Benefits / New Functionality	Version 5 Release 3 offers added security using Secure Sockets Layer (SSL), the Internet standard for secure communication. There are enhanced features for performance—especially for JMS (Java Message Service) applications, making WebSphere MQ the JMS provider of choice. Other features have been added to enhance system scalability and reliability, particularly useful for clustering of systems that can share workload. ▪ **Security Enhancements:** SSL provides a comprehensive solution for security problems with: ▪ 128-bit encryption to prevent eavesdropping ▪ Message Integrity Checking to prevent tampering ▪ Authentication to prevent impersonation ▪ A range of cryptographic algorithms ▪ Support for public/private keys ▪ No key distribution problems ▪ **Performance Improvements:** Performance is optimized for general MQ operation and for JMS. Scalability and performance improvements offer more design choices for system designers. ▪ **API Crossing Exit:** The API crossing exit is a general-purpose framework to allow applications to add their own exits independently from others. An exit point is available in the MQI libraries that can call a chain of functions that operate on the MQI parameters.
Upgrade Cost	Covered under existing maintenance agreement
Operating Systems Supported	▪ z/OS – z/OS 1.1 or higher ▪ Sun Solaris 7 / 8 ▪ HP-UX V11.0 with relevant Year 2000 fixes ▪ HP-UX V11i (11.11)
Vendor End of Service Date for Target Version	▪ z/OS – Not Specified ▪ Sun Solaris – 12/31/2004 ▪ HP – UX – 12/31/2004
Software License Owner	CSC - VDC

Note: The following APARs need to be applied as part of the upgrade to WebSphere MQ v5.3:

- PQ62235 – Applied to v5.2 before v5.3 upgrade is applied
- PQ62766 – Applied after v5.3 upgrade is applied
- PQ62777 – Applied after v5.3 upgrade is applied

3.3.2 Systems Affected

System / Application	Environment	Server	Operating System
Data Mart	Development	HPV1	HP-UX 11.0
Data Mart	Development	HPN25	HP-UX 11.0
EAI Bus	Development	SU35E16	Solaris 7
FAFSA	Development	HPA2	HP-UX 11.0
LOWeb	Development	HPL12	HP-UX 11.0
MQSI Control Center	Development	SFANT006	Windows NT 4.0
CPS	Development / Test	CPSED	OS/390
DLSS	Development / Test	CRDEV2	OpenVMS
EAI WAS, eCB, Informatica	Development / Test	SU35E5	Solaris 2.6
FMS	Development / Test	HPL6	HP-UX 11.0
FMS	Development / Test	HPL7	HP-UX 11.0
NSLDS	Development / Test	NSLSYSP	OS/390
SAIG / bTrade	Development / Test	HPL15	HP-UX 11.0
EAI Bus	Test	SU35E17	Solaris 7
FAFSA	Test	HPN3	HP-UX 11.0
FAFSA	Test	HPN8	HP-UX 11.0
CPS	Production	CPSED	OS/390
DLSS	Production	CRPAS1	OpenVMS
FAFSA	Production	HPN2	HP-UX 11.0
FAFSA	Production	HPN2	HP-UX 11.0
FAFSA	Production	HPN15	HP-UX 11.0
FAFSA	Production	HPN7	HP-UX 11.0
FAFSA	Production	HPN16	HP-UX 11.0
FAFSA	Production	HPN17	HP-UX 11.0

System / Application	Environment	Server	Operating System
FAFSA	Production	HPN26	HP-UX 11.0
FAFSA	Production	HPN5	HP-UX 11.0
FAFSA	Production	HPN19	HP-UX 11.0
FAFSA	Production	HPN21	HP-UX 11.0
FAFSA	Production	HPN23	HP-UX 11.0
FAFSA	Production	HPN27	HP-UX 11.0
FMS / Data Mart	Production	HPV2	HP-UX 11.0
Informatica	Production	SU35E18	Solaris 2.6
LOWeb	Production	HPL13	HP-UX 11.0
MQSI Control Center	Production	Ombuds_OAS	Windows NT 4.0
NSLDS	Production	NSLSYSP	OS/390
PEPS	Production	HPK2	HP-UX 10.2
SAIG / bTrade	Production	HPL16	HP-UX 11.0
EAI Bus	Production (1)	SU35E3	Solaris 7
EAI WAS - eCB	Production (1)	SU35E9	Solaris 2.6
EAI Bus	Production (2)	SU35E14	Solaris 7
EAI WAS - eCB	Production (2)	SU35E13	Solaris 2.6

3.4 SupportPac MA0F: MQSeries Application Messaging Interface (AMI)

The MQSeries Application Messaging Interface (AMI) is a simple application programming interface, providing support for point-to-point and publish/subscribe messaging.

3.4.1 Upgrade Summary

Current Version	1.2
Vendor End of Service Date for Current Version	12/31/2003
Target Version	IBM has not published the subsequent version of AMI that is compatible with MQSeries v5.3. A support inquiry has been logged with IBM.
Release Date	November 15, 2002
Reason for Change	Vendor end of service for current version
Benefits / New Functionality	▪ N/A
Upgrade Cost	Covered under existing maintenance agreement
Operating Systems Supported	▪ Server – HP-UX
Vendor End of Service Date for Target Version	▪ TBD
Software License Owner	CSC – VDC

3.4.2 Systems Affected

System / Application	Environment	Server	Operating System
FMS	Development / Test	HPL6	HP-UX 11.0
FMS	Development / Test	HPL7	HP-UX 11.0
LOWeb	Development	HPL12	HP-UX 11.0
FMS / Data Mart	Production	HPV2	HP-UX 11.0
LOWeb	Production	HPL13	HP-UX 11.0

4 New Software

This section provides the detailed information of new software to be added to the EAI Architecture.

4.1 MQSoftware QPasa!

QPasa! provides configuration management, deployment, and monitoring capabilities of WebSphere MQ components for the EAI Architecture.

4.1.1 Install Summary

Target Version	3.1
Release Date	Planned GA Release 3/1/2003
Benefits / New Functionality	• New Java-based Management Console for Configuration client
Software Cost	Purchased by CSC – VDC
Operating Systems Supported	Agents - MQ Series supported platforms Client/Server - Windows NT
Vendor End of Service Date for Target Version	No defined date
Software License Owner	CSC – VDC

4.1.2 Systems Affected

System / Application	Environment	Server	Operating System
MQSI Control Center	Development	SFANT006	Windows NT 4.0
EAI Bus	Development	SU35E16	Solaris 7
EAI Bus	Test	SU35E17	Solaris 7
MQSI Control Center	Production	Ombuds_OAS	Windows NT 4.0
EAI Bus	Production (1)	SU35E3	Solaris 7
EAI Bus	Production (2)	SU35E14	Solaris 7

4.2 WebSphere MQ Workflow

Currently, WebSphere MQ Workflow v3.3 is purchased and available for install, but lacks the business driver to warrant its implementation at this time. There are plans to install the product to familiarize and better understand the functionality and limitations in preparation for future implementation.

4.2.1 Install Summary

Target Version	3.3.2
Release Date	12/2001
Benefits / New Functionality	▪ Workflow capabilities integrated with WebSphere MQ
Software Cost	Covered under existing maintenance agreement
Operating Systems Supported	HP-UX, Sun Solaris, Windows NT, z/OS
Vendor End of Service Date	6/30/2003
Software License Owner	CSC

4.2.2 Systems Affected

System / Application	Environment	Server	Operating System
EAI Bus	Development	SU35E16	Solaris 7
EAI Bus	Test	SU35E17	Solaris 7

5 Future Software Changes

Provides a summary of the known software changes not in the current Evergreening scope, but on the horizon and should be considered in future planning. These changes are not currently planned and will not be implemented during this fiscal year.

5.1 CommerceQuest Data Integrator

Data Integrator provides the EAI Bus with a high-speed, transport mechanism for transferring large amounts of data between systems.

5.1.1 Upgrade Summary

Current Version	4.2.4
Vendor End of Service Date for Current Version	Not defined by Vendor
Target Version	4.3.2
Release Date	7/31/2002
Benefits / New Functionality	XML Integration for Sun Solaris, HP-UX, MVS
Upgrade Cost	Covered under existing maintenance agreement
Operating Systems Supported	▪ Sun Solaris 7 / 2.8 ▪ HP-UX 10 / 11
Vendor End of Service Date for Target Version	Not defined by Vendor
Software License Owner	CSC – VDC (Transfer to CSC in progress)

5.1.2 Systems Affected

System / Application	Environment	Server	Operating System
Data Mart	Development	HPV1	HP-UX 11.0
EAI Bus	Development	SU35E16	Solaris 7
CPS	Development / Test	CPSED	OS/390
DLSS	Development / Test	CRDEV2	OpenVMS
EAI WAS, eCB, Informatica	Development / Test	SU35E5	Solaris 2.6
FMS	Development / Test	HPL6	HP-UX 11.0
NSLDS	Development / Test	NSLSYSP	OS/390
SAIG / bTrade	Development / Test	HPL15	HP-UX 11.0
EAI Bus	Test	SU35E17	Solaris 7
CPS	Production	CPSED	OS/390
DLSS	Production	CRPAS1	OpenVMS
FMS / Data Mart	Production	HPV2	HP-UX 11.0

System / Application	Environment	Server	Operating System
Informatica	Production	SU35E18	Solaris 2.6
NSLDS	Production	NSLSYSP	OS/390
PEPS	Production	HPK2	HP-UX 10.2
SAIG / bTrade	Production	HPL16	HP-UX 11.0
EAI Bus	Production (1)	SU35E3	Solaris 7
EAI WAS – eCB	Production (1)	SU35E9	Solaris 2.6
EAI Bus	Production (2)	SU35E14	Solaris 7
EAI WAS – eCB	Production (2)	SU35E13	Solaris 2.6

5.2 Sun Java™ 2 SDK, Standard Edition (J2SE), v1.4.0

The J2SE contains the essential compiler, tools, runtimes, and APIs for writing, deploying, and running applets and applications in the Java programming language. Formerly referred to as JDK.

5.2.1 Upgrade Summary

Current Version	1.2.0
Vendor End of Service Date for Current Version	Not available
Target Version	1.4.0
Release Date	5/17/2001
Benefits / New Functionality	http://java.sun.com/j2se/1.4/docs/relnotes/features.html
Upgrade Cost	Covered under existing maintenance agreement
Operating Systems Supported	Sun Solaris 7 / 8* Window NT HP-UX 10 / 11
Vendor End of Service Date for Target Version	
Software License Owner	

***Note:** Sun Recommends the *J2SE Solaris 7 Recommended Patch Cluster (*http://sunsolve.sun.com/pub-cgi/show.pl?target=patches/J2SE*)*. These recommended patches are considered the most important and highly recommended patches that avoid the most critical system, user, or other bugs related to the functionality of the Java platform on the Solaris Operating Environment which have been reported and fixed to date.

5.2.2 Systems Affected

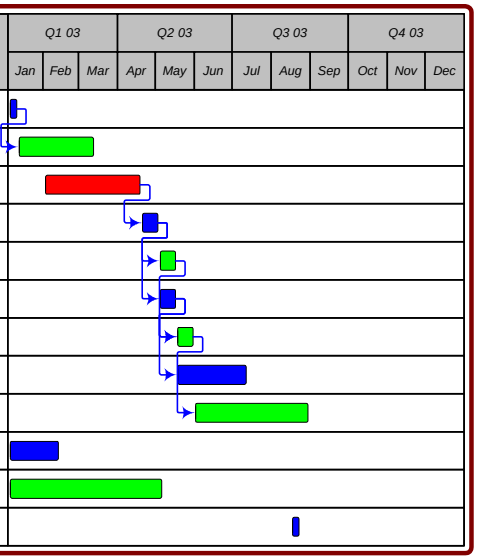
System / Application	Environment	Server	Operating System
Data Mart	Development	HPV1	HP-UX 11.0
EAI Bus	Development	SU35E16	Solaris 7
CPS	Development / Test	CPSED	OS/390
DLSS	Development / Test	CRDEV2	OpenVMS
EAI WAS, eCB, Informatica	Development / Test	SU35E5	Solaris 2.6
FMS	Development / Test	HPL6	HP-UX 11.0
NSLDS	Development / Test	NSLSYSP	OS/390
SAIG / bTrade	Development / Test	HPL15	HP-UX 11.0
EAI Bus	Test	SU35E17	Solaris 7
CPS	Production	CPSED	OS/390
DLSS	Production	CRPAS1	OpenVMS

System / Application	Environment	Server	Operating System
FMS / Data Mart	Production	HPV2	HP-UX 11.0
Informatica	Production	SU35E18	Solaris 2.6
NSLDS	Production	NSLSYSP	OS/390
PEPS	Production	HPK2	HP-UX 10.2
SAIG / bTrade	Production	HPL16	HP-UX 11.0
EAI Bus	Production (1)	SU35E3	Solaris 7
EAI WAS - eCB	Production (1)	SU35E9	Solaris 2.6
EAI Bus	Production (2)	SU35E14	Solaris 7
EAI WAS - eCB	Production (2)	SU35E13	Solaris 2.6

6 Evergreening Schedule

The EAI Evergreening schedule is a point in time representation of the delivery milestones for the software changes defined in this document. The implementation of the new software packages and upgrades are dependent on a number of external factors including COD 2.0 development and testing, other development initiatives, and resource constraints.

ID	Task Name	Start	End	Responsible Party
1	DB2 v6.1 Fix Pack 11- Dev/Test	1/6/2003	1/10/2003	EAI
2	DB2 v6.1 Fix Pack 11- Staging / Prod	1/13/2003	3/12/2003	VDC
3	COD 2.0 IST / UAT	2/3/2003	4/18/2003	COD
4	MQSI v2.0.2 - Dev/Test	4/21/2003	5/2/2003	EAI
5	MQSI v2.0.2 - Staging / Prod	5/5/2003	5/16/2003	VDC
6	DB2 v7.2 Fix Pack 7 - Dev/Test	5/5/2003	5/16/2003	EAI
7	DB2 v7.2 Fix Pack 7 - Staging / Prod	5/19/2003	5/30/2003	VDC
8	MQ Series v5.3 - Dev/Test	5/19/2003	7/11/2003	EAI
9	MQ Series v5.3 - Staging / Prod	6/2/2003	8/29/2003	VDC
10	Qpasa! - Dev/Test	1/6/2003	2/12/2003	EAI
11	Qpasa! - Staging / Production	1/6/2003	5/5/2003	VDC
12	MQ Workflow - Dev / Test	8/18/2003	8/22/2003	EAI



Schedule Assumptions:

- MQSeries v5.3 upgrade assumes that 2 servers will be upgraded per week for the Development /Test and the Staging /Production.
- VDC will ensure the Staging environment is upgraded.